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Invasion of a holarctic planktonic cladoceran daphnia galeata sars (Crustacea: Cladocera) in the lower lakes of South Australia

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Abstract

Copyright © 2018 Magnolia Press. We found a Holarctic microcrustacean Daphnia galeata Sars, 1863 (Cladocera: Daphniidae) in the Lower Lakes of South Australia. This taxon was never detected in continental Australia before. Its identity was confirmed by the sequences of mitochondrial COI, 12S and 16S and nuclear 18S and 28S genes. A maximum likelihood tree from a dataset from combining 12S + 16S mitochondrial sequence and a split network of the COI haplotypes are provided, but resolution of both genes is not sufficient to reveal the exact region of the Holarctic from where D. galeata was introduced to Australia; the vector of its invasion also is unknown. We hypothesize that appearance of D. galeata in the Lower Lakes of the Murray River is related to a recent anthropogenic eutrophication of water bodies in this region, keeping in mind that examples of successful invasion of some European lakes by D. galeata after their eutrophication are well-known. We also hypothesize that establishment of this non-indigenous taxon populations in Australia might have a strong negative impact on native lake biota.

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Keywords

Australia, Biological invasion, Cladocera, Daphnia, Eutrophication

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